

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

CARNEGIE INSTITUTION OF WASHINGTON
and M7D CORPORATION,

Plaintiffs,

v.

PURE GROWN DIAMONDS, INC. and
IIA TECHNOLOGIES PTE. LTD d/b/a
IIA TECHNOLOGIES,

Defendants.

Case No. 20-cv-0189 (JSR)

**DEFENDANTS' ANSWERS,
DEFENSES, AND COUNTERCLAIMS**

Defendants Pure Grown Diamonds, Inc. ("PGD") and Ila Technologies Pte. Ltd. ("2AT") provide the following Answers to the Complaint filed by Plaintiffs Carnegie Institution of Washington ("Carnegie") and M7D Corporation ("M7D").

GENERAL DENIAL

Any allegations of the Complaint not specifically admitted are denied.

THE PARTIES

Plaintiffs—Carnegie Institution of Washington and M7D Corporation

1. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 1 of the Complaint, and on that basis deny the allegations.
2. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 2 of the Complaint, and on that basis deny the allegations.
3. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 3 of the Complaint, and on that basis deny the allegations.
4. PGD and 2AT both deny the allegations in Paragraph 4 of the Complaint.
5. PGD and 2AT both deny the allegations in Paragraph 5 of the Complaint.

6. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 6 of the Complaint, and on that basis deny the allegations.

7. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 7 of the Complaint, and on that basis deny the allegations.

8. PGD admits that it is a Delaware corporation. PGD denies the remaining allegations in Paragraph 8. The allegations in Paragraph 8 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

9. PGD admits that, on or about June 18, 2018, it moved to a new location at 45 West 45th Street, 5th Floor, New York, New York 10036, with a New York City phone number 646-992-3250. PGD otherwise denies the allegations in Paragraph 9 of the Complaint. The allegations in Paragraph 9 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

10. PGD denies that it currently has a location at 28 West 44th St., Suite 1204, New York, New York 10036. The allegations in Paragraph 10 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

11. PGD admits that it is headquartered in New York, New York. The allegations in Paragraph 11 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information

sufficient to form a belief as to the allegations and on that basis denies them.

12. PGD admits that it has one principal place of business, in New York City. The allegations in Paragraph 12 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

13. PGD admits that it owns or leases the PGD NYC Location. The allegations in Paragraph 13 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

14. PGD admits that it has an active registration to do business in New York with the Department of State. PGD admits that it lists, on that active registration, that its New York State Department of State process address as “C/O Business Filings Incorporated, 187 Wolf Road Suite 101, Albany, New York, 12205.” PGD otherwise denies the allegations in Paragraph 14 of the Complaint. The allegations in Paragraph 14 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

15. PGD admits that it has employees in the United States and New York State, including at the PGD NYC Location and in this Judicial District. PGD denies the remaining allegations in Paragraph 15 of the Complaint. The allegations in Paragraph 15 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

16. PGD admits that it has solicited employees to work in New York State, including at the PGD NYC Location and in this Judicial District, but denies that it actively does so. The allegations in Paragraph 16 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

17. PGD and 2AT both deny the allegations in Paragraph 17 of the Complaint.

18. PGD admits that it conducts business related to the offer for sale, sale, use, and importation of CVD diamonds from the PGD NYC Location. PGD denies that it conducts any business related to the manufacture of CVD diamonds. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 18 of the Complaint, and on that basis denies them. The allegations in Paragraph 18 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

19. PGD admits that it buys, offers for sale, uses, and sells CVD diamonds. PGD denies the remaining allegations in Paragraph 19 of the Complaint. The allegations in Paragraph 19 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

20. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 20 of the Complaint, and on that basis deny the allegations. The allegations in Paragraph 20 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or

information sufficient to form a belief as to the allegations and on that basis denies them.

21. PGD admits that it uses CVD diamonds to create jewelry such as bridal jewelry. PGD admits that it made available bridal jewelry sometime around late 2017. PGD admits that Paragraph 21 purports to quote from a website that was operated by PGD but denies the characterizations of that website. PGD denies the remaining allegations in Paragraph 21 of the Complaint. The allegations in Paragraph 21 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

22. PGD admits that it offers for sale and sells CVD diamonds to customers, third-party diamond sellers, and retailers. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 22 of the Complaint, and on that basis denies them. 2AT lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 22 of the Complaint, and on that basis denies them.

23. PGD denies the allegations in Paragraph 23 of the Complaint. The allegations in Paragraph 23 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

24. PGD denies the allegations in Paragraph 24 of the Complaint. The allegations in Paragraph 24 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

25. PGD denies that it partners with retailers on digital campaigns. The allegations in

Paragraph 25 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

26. PGD admits that it offers limited branding and collateral support to actual retailers of PGD's CVD diamonds. PGD denies the remaining allegations in Paragraph 26 of the Complaint. The allegations in Paragraph 26 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

27. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 27 of the Complaint, and on that basis deny the allegations.

28. PGD admits that CVD diamonds sold by PGD are available through New York-based retailers and other retailers. PGD denies that it sells diamonds to Diamonds By Israel Standard and denies that there is a "Pure Grown Showroom." PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 28 of the Complaint, and on that basis denies them. 2AT lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 28 and on that basis denies them.

29. PGD admits that it currently has knowledge of the two patents asserted in this lawsuit. PGD denies the remaining allegations in Paragraph 29. The allegations in Paragraph 29 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

30. PGD admits that a principal in PGD currently is aware of the two patents asserted

in this lawsuit. PGD denies the remaining allegations in Paragraph 30 of the Complaint. The allegations in Paragraph 30 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

31. PGD denies the allegations in Paragraph 31 of the Complaint. The allegations in Paragraph 31 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

Defendant—Ila Technologies PTE, Ltd.

32. 2AT denies that it has sold CVD diamonds to PGD. 2AT manufactures only rough diamonds, not cut and polished diamond gems. Because 2AT does not know what happens to its rough diamonds after its customers or other third parties cut and polish them, 2AT does not know whether its diamonds may have ultimately reached PGD. 2AT therefore lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 32 of the Complaint, and on that basis denies the allegations. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 32 of the Complaint, and on that basis denies the allegations.

33. 2AT denies that it has sold CVD diamonds to PGD. 2AT only anneals semi-finished diamonds as a service for third-party customers (and not PGD). Because 2AT does not know what happens to its annealed, semi-finished diamonds after its customers or other third parties cut and polish them, 2AT does not know whether its diamonds may have ultimately reached PGD. 2AT therefore lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 33 of the Complaint, and on that basis denies the allegations. PGD lacks

knowledge or information sufficient to form a belief as to the allegations in Paragraph 33 of the Complaint, and on that basis denies the allegations.

34. 2AT denies the allegations in Paragraph 34 of the Complaint. The allegations in Paragraph 34 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

35. 2AT admits that it is incorporated and located in Singapore. The allegations in Paragraph 35 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

36. 2AT admits that it has a headquarters at 17 Tukang Innovation Drive, Singapore 618300. The allegations in Paragraph 36 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

37. 2AT denies that it has sold CVD diamonds to PGD. 2AT manufactures only rough diamonds, not cut and polished diamond gems. Because 2AT does not know what happens to its rough diamonds after its customers or other third parties cut and polish them, 2AT does not know whether its diamonds may have ultimately reached PGD. 2AT therefore lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 37 of the Complaint, and on that basis denies the allegations. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 37 of the Complaint, and on that basis denies the allegations.

38. 2AT denies that it has sold CVD diamonds to PGD. 2AT only anneals semi-finished diamonds as a service for third-party customers (and not PGD). Because 2AT does not know what happens to its annealed, semi-finished diamonds after its customers or other third parties cut and polish them, 2AT does not know whether its diamonds may have ultimately reached PGD. 2AT therefore lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 38 of the Complaint, and on that basis denies the allegations. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 38 of the Complaint, and on that basis denies the allegations.

39. PGD and 2AT both deny the allegations in Paragraph 39 of the Complaint.

40. 2AT admits that it manufactures, offers for sale, and sells CVD rough diamonds outside of the United States. 2AT admits that it anneals semi-finished diamonds outside of the United States. 2AT denies the remaining allegations in Paragraph 40 of the Complaint. The allegations in Paragraph 40 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

41. PGD and 2AT both deny the allegations in Paragraph 41 of the Complaint.

42. PGD and 2AT both deny the allegations in Paragraph 42 of the Complaint.

43. PGD admits that it imports CVD diamonds to the PGD NYC Location in New York State. PGD denies remaining allegations directed to PGD in Paragraph 43 of the Complaint. 2AT denies the allegations in Paragraph 43 of the Complaint directed to 2AT.

44. 2AT admits that it currently has knowledge of the two patents asserted in this lawsuit. 2AT denies the remaining allegations in Paragraph 44. The allegations in Paragraph 44 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the

extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

45. 2AT admits that principals in 2AT currently are aware of the two patents asserted in this lawsuit. 2AT denies the remaining allegations in Paragraph 45. The allegations in Paragraph 45 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

46. 2AT denies the allegations in Paragraph 46 of the Complaint. The allegations in Paragraph 46 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

JURISDICTION AND VENUE

47. PGD and 2AT both incorporate the responses to Paragraphs 1-46 above.

48. PGD and 2AT both admit that Plaintiffs purport to bring this action under the laws of the United States, 35 U.S.C. § 1 *et seq.* but denies Plaintiffs are entitled to any relief. Plaintiffs admit this Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a) with regard to any claims alleged under 35 U.S.C. § 1 *et seq.* PGD and 2AT otherwise deny the allegations in Paragraph 48 of the Complaint.

49. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 49 of the Complaint, and on that basis deny the allegations.

Personal Jurisdiction over PGD

50. PGD admits for purposes of this case that this Court has personal jurisdiction over it. PGD denies the allegations of patent infringement contained in Paragraph 50. The allegations

in Paragraph 50 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

51. PGD admits for purposes of this case that this Court has personal jurisdiction over it. PGD admits that it moved to the PGD NYC Location, leases or owns the PGD NYC Location, maintains a headquarters in New York City, operates out of the PGD NYC Location, has employees at the PGD NYC Location, and maintains an address for service of process in Albany, New York. PGD admits that it conducts business related to the offer for sale, sale, use, and importation of CVD diamonds from the PGD NYC Location. PGD lacks knowledge or information sufficient to form a belief as to the allegations regarding the offer for sale, sale, use, and importation of annealed diamonds and on that basis denies them. PGD denies that it conducts any business related to the manufacture of CVD diamonds or annealed diamonds. PGD otherwise denies the allegations in Paragraph 51 of the Complaint. The allegations in Paragraph 51 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

52. PGD admits for purposes of this case that this Court has personal jurisdiction over it and that Paragraph 52 purports to describe the functionality of a website that was operated by PGD. PGD denies the characterizations of that website and otherwise denies the allegations in Paragraph 52 of the Complaint. The allegations in Paragraph 52 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

53. PGD does not challenge this Court's specific personal jurisdiction for purposes of this case. PGD denies the remaining allegations in Paragraph 53 of the Complaint. The allegations in Paragraph 53 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

54. PGD admits that it provides limited promotional materials and other information to third-party diamond retailers and jewelry stores in New York State and this Judicial District. PGD denies the remaining allegations in Paragraph 54. The allegations in Paragraph 54 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

55. PGD denies the allegations in Paragraph 55 of the Complaint. The allegations in Paragraph 55 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

56. PGD denies the allegations in Paragraph 56 of the Complaint. The allegations in Paragraph 56 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

57. The allegations in Paragraph 57 are legal conclusions and not entitled to a response from either PGD or 2AT. To the extent a response is required, PGD and 2AT deny the allegations in Paragraph 57.

Personal Jurisdiction over Ila Technologies

58. 2AT has not challenged this Court's personal jurisdiction for purposes of this case but denies the allegations in Paragraph 58. The allegations in Paragraph 58 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

59. 2AT denies the allegations in Paragraph 59 of the Complaint. The allegations in Paragraph 59 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

60. 2AT denies that it actively solicits purchases and sales from United States customers. PGD and 2AT both deny that 2AT actively solicits purchases and sales specifically from PGD. 2AT admits Dr. Devi Shanker Misra is CTO of 2AT. PGD denies that Dr. Devi Shanker Misra is CTO of PGD. 2AT admits that Paragraph 60 of the Complaint appears to characterize a website that was operated by 2AT but denies those characterizations. PGD and 2AT both admit that Paragraph 60 of the Complaint also appears to quote an Internet article on prnewswire.com titled "World's Largest Pure Grown Diamond Unveiled" and dated December 8, 2014. PGD and 2AT both deny that PGD is the exclusive retailer and distributor of diamonds grown by 2AT. PGD and 2AT otherwise deny the allegations of Paragraph 60.

Venue over PGD

61. The allegations contained in Paragraph 61 are legal conclusions that do not merit a response. To the extent a response is deemed to be required, PGD denies the allegations of Paragraph 61; however, PGD does not challenge venue for purposes of the present action. The

allegations in Paragraph 61 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

62. The allegations contained in Paragraph 62 are legal conclusions that do not merit a response. To the extent a response is deemed to be required, PGD denies the allegations of Paragraph 62; however, PGD denies that it has committed any acts of infringement. The allegations in Paragraph 62 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

Venue over Ila Technologies

63. The allegations contained in Paragraph 63 are legal conclusions that do not merit a response. To the extent a response is deemed to be required, 2AT denies the allegations of Paragraph 63; however, 2AT does not challenge venue for purposes of the present case. The allegations in Paragraph 63 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

THE PATENTS-IN-SUIT

64. PGD and 2AT both admit that what appears to be a copy of U.S. Patent No. 6,858,078 was attached to the Complaint as Exhibit A (“’078 Patent”). PGD and 2AT both admit the ’078 Patent is titled “Apparatus and Method of Diamond Production” and bears a date of February 22, 2005. PGD and 2AT both deny the remaining allegations in Paragraph 64 of the Complaint.

65. PGD and 2AT both admit that the cover of ’078 Patent states that it issued from

U.S. Patent Application No. 10/288,499.

66. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 66 of the Complaint, and on that basis deny the allegations.

67. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 67 of the Complaint, and on that basis deny the allegations.

68. PGD and 2AT both deny the allegations in Paragraph 68 of the Complaint.

69. PGD and 2AT both admit that the '078 Patent contains 64 claims on its face. The '078 Patent claims include specific recitations, and PGD and 2AT both deny any characterizations of the '078 Patent in Paragraph 69 of the Complaint. PGD and 2AT otherwise deny the allegations of Paragraph 69.

70. PGD and 2AT both admit that what appears to be a copy of U.S. Patent No. RE41,189 was attached to the Complaint as Exhibit B (" '189 Patent"). PGD and 2AT both admit the '189 Patent is titled "Method of Making Enhanced CVD Diamond" and bears a date of April 6, 2010. PGD and 2AT both deny the remaining allegations in Paragraph 70 of the Complaint.

71. PGD and 2AT both admit that the cover of the '078 Patent indicates it is a reissue of U.S. Patent No. 6,811,610, filed on June 3, 2002, as U.S. Patent Application No. 10/161,266, which issued on November 2, 2004.

72. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 72 of the Complaint, and on that basis deny the allegations.

73. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the allegations in Paragraph 73 of the Complaint, and on that basis deny the allegations.

74. PGD and 2AT both deny the allegations in Paragraph 74 of the Complaint.

75. PGD and 2AT both admit the '189 Patent contains 7 claims. The '189 Patent

claims include specific recitations, and PGD and 2AT both deny any characterizations of the '189 Patent in Paragraph 75 of the Complaint. PGD and 2AT otherwise deny the allegations of Paragraph 75.

BACKGROUND ON NATURAL AND LAB-GROWN DIAMONDS

76. 2AT admits the term “diamond” generally refers to a solid form of carbon with the carbon atoms arranged in a diamond cubic crystal structure. 2AT lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 76 of the Complaint, and on that basis denies them. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 76 of the Complaint, and on that basis denies the allegations.

77. PGD and 2AT both admit the allegations in Paragraph 77 of the Complaint.

78. PGD and 2AT both admit one way to make lab-grown diamonds is to use CVD and a diamond seed. PGD and 2AT both lack knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 78 of the Complaint, and on that basis deny them.

79. 2AT admits that there are multiple types of CVD, including MPCVD, which has been used for many decades to grow single-crystal diamond. To the extent Plaintiffs are alleging that MPCVD diamond growth only provides high-quality diamonds, 2AT denies that allegation. 2AT otherwise denies the allegations of Paragraph 79. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 79 of the Complaint, and on that basis denies the allegations.

80. PGD and 2AT both admit CVD diamonds, like all diamonds, can be classified based on the well-known type classification of diamonds. PGD and 2AT both admit that within

Type II, diamonds are further sorted into Type IIa and Type IIb. PGD and 2AT both admit that Type IIa diamonds can have trace nitrogen impurities and that imperfections can impart color to the gem, resulting in various color grades. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 80 of the Complaint, and on that basis denies them. 2AT admits that single-crystal diamond gems grown using MPCVD, which has been known since at least the 1990s, are Type IIa. 2AT lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 80 of the Complaint, and on that basis denies them.

PGD'S CVD DIAMOND PRODUCTS

81. PGD admits that it uses, offers to sell, and sells in the United States, and imports into the United States, lab-grown CVD diamonds. PGD denies the remaining allegations in Paragraph 81. The allegations in Paragraph 81 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

82. PGD admits that Paragraph 82 of the Complaint purports to quote and reproduce a portion of a website that was operated by PGD but denies the characterizations of the website. The allegations in Paragraph 82 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

83. PGD admits that the Complaint purports to quote a portion of an Internet article titled "World's Largest Pure Grown Diamond Unveiled" published on prnewswire.com and

dated December 8, 2014. PGD denies the characterizations of that article. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 83 of the Complaint, and on that basis denies them. The allegations in Paragraph 83 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

84. PGD admits that the Complaint purports to quote and reproduce a portion of an Internet article titled “World’s Largest Pure Grown Diamond Unveiled” published on prnewswire.com and dated December 8, 2014. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 84 of the Complaint, and on that basis denies them. The allegations in Paragraph 84 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

85. PGD denies the allegations in Paragraph 85 of the Complaint. The allegations in Paragraph 85 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

86. PGD admits the Complaint purports to quote and reproduce a portion of a website. PGD otherwise denies the allegations of Paragraph 86. The allegations in Paragraph 86 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

IIA TECHNOLOGIES' DIAMOND PRODUCTS

87. 2AT denies the allegations in Paragraph 87. The allegations in Paragraph 87 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

88. 2AT admits that Paragraph 88 of the Complaint purports to quote and reproduce a portion of a website that was operated by 2AT. 2AT denies the characterizations of the website referenced in the allegations of Paragraph 88. The allegations in Paragraph 88 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

89. 2AT admits that Paragraph 89 of the Complaint purports to quote a portion of a website that was operated by 2AT. 2AT denies the characterizations of the website referenced in the allegations of Paragraph 89. The allegations in Paragraph 89 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

90. 2AT admits that Paragraph 90 of the Complaint purports to quote and reproduce a portion of a website that was operated by 2AT. 2AT denies the characterizations of the website referenced in the allegations of Paragraph 90. The allegations in Paragraph 90 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

91. 2AT admits that it manufactures, markets, offers for sale, and sells Type IIa diamonds outside of the United States as gems. 2AT denies the remaining allegations in Paragraph 91 of the Complaint. The allegations in Paragraph 91 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

COUNT ONE: INFRINGEMENT OF THE '078 PATENT

92. PGD and 2AT both incorporate the responses to Paragraphs 1-91 above.

93. PGD and 2AT both admit Plaintiffs have not granted either one of them a license to the '078 Patent. PGD and 2AT both deny any allegations of infringement regarding the '078 Patent.

Direct Infringement

94. PGD and 2AT both deny the allegations of Paragraph 94 of the Complaint.

95. PGD denies the allegations of Paragraph 95 of the Complaint. The allegations in Paragraph 95 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

96. PGD denies the allegations of Paragraph 96 of the Complaint. The allegations in Paragraph 96 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

97. 2AT denies the allegations in Paragraph 97 of the Complaint. The allegations in Paragraph 97 of the Complaint are not directed to 2AT, so no response from 2AT is required;

however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

98. PGD and 2AT both deny the allegations in Paragraph 98 of the Complaint.

99. PGD and 2AT both deny the allegations in Paragraph 99 of the Complaint.

100. PGD and 2AT both deny the allegations in Paragraph 100 of the Complaint.

101. PGD admits that it made available bridal jewelry sometime around late 2017 that uses Type IIa diamonds. 2AT lacks knowledge or information sufficient to form a belief as to PGD's alleged jewelry and on that basis denies those allegations. PGD and 2AT both deny the remaining allegations in Paragraph 101 of the Complaint.

102. 2AT denies the allegations in Paragraph 102 of the Complaint. The allegations in Paragraph 102 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

103. 2AT denies the allegations in Paragraph 103 of the Complaint. The allegations in Paragraph 103 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

104. PGD denies the allegations in Paragraph 104 of the Complaint. The allegations in Paragraph 104 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

105. 2AT denies the allegations in Paragraph 105 of the Complaint. The allegations in Paragraph 105 of the Complaint are not directed to PGD, so no response from PGD is required;

however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

106. PGD and 2AT both deny the allegations in Paragraph 106 of the Complaint.

Induced Infringement

107. PGD and 2AT both deny the allegations in Paragraph 107 of the Complaint.

108. PGD and 2AT both deny the allegations in Paragraph 108 of the Complaint.

109. PGD and 2AT both deny the allegations in Paragraph 109 of the Complaint.

110. PGD and 2AT both deny the allegations in Paragraph 110 of the Complaint.

111. PGD denies its lack of knowledge about the '078 Patent was willful. PGD denies that Dr. Devi Shankar Misra, Ph.D. is, or ever was, Chief Technology Officer of PGD. PGD denies that Dr. Misra is the inventor of any patented PGD process. PGD denies that it has any patented processes. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 111 of the Complaint, and on that basis denies them. The allegations in Paragraph 111 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

112. 2AT admits that Dr. Devi Shankar Misra is 2AT's Chief Technical Officer. 2AT admits that Dr. Devi Shankar Misra is a named inventor on at least seven patents relating to diamonds, the earliest of which was filed in June 2009. 2AT denies the remaining allegations in Paragraph 112. The allegations in Paragraph 112 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

113. PGD and 2AT both deny the allegations in Paragraph 113 of the Complaint.

114. PGD and 2AT both deny the allegations in Paragraph 114 of the Complaint.

Willful Infringement

115. PGD and 2AT both deny the allegations in Paragraph 115 of the Complaint.

116. PGD and 2AT both deny the allegations in Paragraph 116 of the Complaint.

117. PGD and 2AT both deny the allegations of Paragraph 117 of the Complaint and deny that Plaintiffs are entitled to the requested relief.

COUNT TWO: INFRINGEMENT OF THE PATENT '189 PATENT

118. PGD and 2AT both incorporate their responses to Paragraphs 1-117 above.

119. PGD and 2AT both admit Plaintiffs have not granted either one of them a license to the '189 Patent. PGD and 2AT both deny any allegations of infringement regarding the '189 Patent.

Direct Infringement

120. PGD and 2AT both deny the allegations in Paragraph 120 of the Complaint.

121. PGD and 2AT both deny the allegations in Paragraph 121 of the Complaint.

122. 2AT denies the allegations in Paragraph 122 of the Complaint.

123. PGD and 2AT both deny the allegations in Paragraph 123 of the Complaint.

124. 2AT denies that additional processing is needed for an as-grown CVD diamond to be Type IIA. 2AT admits that Type IIA diamonds can have trace nitrogen impurities and that imperfections can result in various color grades. 2AT admits that Type IIA diamonds have been grown using CVD and subsequently annealed to improve color since at least the 1990s. 2AT denies the remaining allegations in Paragraph 124 of the Complaint. PGD lacks knowledge or information sufficient to form a belief as to the allegations in Paragraph 124 of the Complaint,

and on that basis denies the allegations.

125. PGD and 2AT both deny the allegations in Paragraph 125 of the Complaint.

126. PGD and 2AT both deny the allegations in Paragraph 126 of the Complaint.

127. PGD and 2AT both deny the allegations in Paragraph 127 of the Complaint.

128. 2AT denies the allegations in Paragraph 128 of the Complaint. The allegations in Paragraph 128 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

129. 2AT and PGD both deny the allegations in Paragraph 129 of the Complaint.

130. PGD and 2AT both deny the allegations in Paragraph 130 of the Complaint.

Induced Infringement

131. PGD and 2AT both deny the allegations in Paragraph 131 of the Complaint.

132. PGD and 2AT both deny the allegations in Paragraph 132 of the Complaint.

133. PGD and 2AT both deny the allegations in Paragraph 133 of the Complaint.

134. PGD and 2AT both deny the allegations in Paragraph 134 of the Complaint.

135. PGD denies its lack of knowledge about the '189 Patent was willful. PGD denies that Dr. Devi Shankar Misra, Ph.D. is, or ever was, Chief Technology Officer of PGD. PGD denies that Dr. Misra is the inventor of any patented PGD process. PGD denies that it has any patented processes. PGD lacks knowledge or information sufficient to form a belief as to the remaining allegations in Paragraph 135 of the Complaint, and on that basis denies them. The allegations in Paragraph 135 of the Complaint are not directed to 2AT, so no response from 2AT is required; however, to the extent a response is deemed to be required, 2AT lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

136. 2AT admits that Dr. Devi Shankar Misra is 2AT's Chief Technical Officer. 2AT admits that Dr. Devi Shankar Misra is a named inventor on at least seven patents relating to diamonds, the earliest of which was filed in June 2009. 2AT denies the remaining allegations in Paragraph 136. The allegations in Paragraph 136 of the Complaint are not directed to PGD, so no response from PGD is required; however, to the extent a response is deemed to be required, PGD lacks knowledge or information sufficient to form a belief as to the allegations and on that basis denies them.

137. PGD and 2AT both deny the allegations in Paragraph 137 of the Complaint.

138. PGD and 2AT both deny the allegations in Paragraph 138 of the Complaint.

Willful Infringement

139. PGD and 2AT both deny the allegations in Paragraph 139 of the Complaint.

140. PGD and 2AT both deny the allegations in Paragraph 140 of the Complaint.

141. PGD and 2AT both deny the allegations of Paragraph 141 of the Complaint and deny that Plaintiffs are entitled to the requested relief.

DEMAND FOR A JURY TRIAL

PGD and 2AT both admit that Plaintiffs purport to demand a jury for all issues so triable.

PRAYER FOR RELIEF

PGD and 2AT both deny that Plaintiffs are entitled to any of the relief sought in the Complaint.

AFFIRMATIVE DEFENSES

PGD and 2AT both assert the following affirmative defenses. PGD and 2AT both reserve the right to modify its defenses and/or to raise additional defenses as discovery proceeds.

FIRST AFFIRMATIVE DEFENSE
(Non-Infringement of the Claims)

1. Neither PGD nor 2AT has infringed any enforceable, patent-eligible, and valid claim of any of the patents Plaintiffs have asserted against PGD and 2AT directly, indirectly, contributorily, or by inducement, either literally or under the doctrine of equivalents.

2. For example, neither PGD nor 2AT directly infringes (either literally or under the doctrine of equivalents) the claims identified in the Complaint or in Plaintiff's Local Patent Rule 6 disclosures. neither PGD nor 2AT manufactures diamonds in the United States. 2AT does not sell, offer for sale, use, or import diamonds in the United States. Neither PGD nor 2AT offers to sell, sells, uses, or imports into the United States diamonds made by the claimed processes. Neither PGD nor 2AT infringes the claims of the asserted patents under 35 U.S.C. § 271(g).

3. In addition, neither PGD nor 2AT contributes to or induces the infringement of any claims identified in the Complaint. For example, neither PGD nor 2AT has induced, nor do they induce, infringement of any claims identified in the Complaint. Nor does either PGD or 2AT possess a specific intent to encourage others to infringe any claims identified in the Complaint. Neither PGD nor 2AT has been willfully blind to any risk of infringing either patent identified in the Complaint.

SECOND AFFIRMATIVE DEFENSE
(Invalidity of the Claims)

4. The claims of the patents Plaintiffs have asserted against 2AT and PGD are invalid for failure to comply with the conditions for patentability specified in 35 U.S.C. § 101 *et seq.*, including without limitation each requirement in 35 U.S.C. §§ 101, 102, 103, 112, and 132.

THIRD AFFIRMATIVE DEFENSE
(No Willfulness)

5. Neither PGD nor 2AT has intentionally, willfully, or deliberately infringed, either

literally or under the doctrine of equivalents, any claim of the patents Plaintiffs have asserted against 2AT and PGD.

**FOURTH AFFIRMATIVE DEFENSE
(Unavailability of Pre-Suit Damages)**

6. On information and belief, Plaintiffs have not complied with the requirements of 35 U.S.C. § 287(b)(2) by providing actual notice to either PGD or 2AT prior to filing the Complaint, and are therefore precluded in whole or in part from seeking any recovery for alleged damages for the purported infringement of the patents identified in the Complaint prior to serving the Complaint in this action.

7. Both PGD and 2AT lacked specific intent for others to infringe and a reckless disregard for infringement of the asserted patents prior to being served the Complaint (as they still do). Accordingly, Plaintiffs are not entitled to recover any damages for either contributory or induced infringement prior to the Complaint.

**FIFTH AFFIRMATIVE DEFENSE
(Inequitable Conduct and Patent Misuse)**

8. The '189 Patent is unenforceable because U.S. Patent No. 6,811,610 ("the '610 Patent"), from which the '189 Patent reissued, was obtained as a result of concealing its true inventorship. In the alternative, the '189 Patent is unenforceable because it only issued because of the deliberate omission of material information about a previously failed attempt to institute an interference.

9. On June 3, 2002, Robert H. Frushour and Wei Li filed U.S. Patent Application No. 10/161,266 (the "'266 Application"), which listed Frushour and Li as joint inventors. Frushour and Li assigned the '266 Application to Phoenix Crystal Corporation, of which Frushour was CEO and Li an employee. Their signed oaths of inventorship state as follows: "I

believe I am . . . an original, first and joint inventor . . . of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD OF MAKING ENHANCED CVD DIAMOND.” On April 15, 2004, the ’266 Application was eventually allowed, and it issued as the ’610 Patent.

10. On July 13, 2004, Russel J. Hemley, Ho-Kwang Mao, and Chih-shiue Yan (the “’171 applicants”) filed U.S. Patent Application No. 10,889,171 (the “’171 Application”), which listed Hemley, Mao, and Yan as joint inventors. Hemley, Mao, and Yan assigned the ’171 Application to Carnegie Institution of Washington, effective July 12, 2004. Their oaths of inventorship state as follows: “I believe I am . . . an original, first and joint inventor . . . of the subject matter which is claimed and for which a patent is sought on the invention entitled: ANNEALING SINGLE CRYSTAL CHEMICAL VAPOR DEPOSITION DIAMONDS.”

11. Along with the ’171 Application, Hemley, Mao, and Yan included a request for an interference proceeding with the ’266 Application, accompanied by a declaration signed by the ’171 Applicants. The same request and declaration were made part of the file for the ’266 Application on August 30, 2004.

12. On November 2, 2004, the USPTO issued the ’266 Application as the ’610 Patent. On November 22, 2006, the USPTO denied the ’171 Applicants’ request for an interference proceeding. And on August 15, 2007, the ’171 Application went abandoned by Carnegie.

13. The claims of the ’171 Application were identical to the claims of the ’266 Application, the ’610 Patent, and the ’189 Patent.

14. According to the declaration submitted by the ’171 Applicants, Li and Frushour intentionally concealed the true inventorship of the ’266 Application from the USPTO. This information was material to patentability because, but for the concealment of true inventorship,

the USPTO would not have issued the '610 Patent in view of 35 U.S.C. § 102(f) (2000). This inequitable conduct taints not just the '610 Patent, but the '189 Patent, as inequitable conduct cannot be cured by reissue.

15. In addition, or in the alternative, the Patent Office reissued the '189 Patent as a result of Carnegie's deceptive intent during the reissue process.

16. On May 22, 2002, Frushour and Li assigned their rights in the '266 Application to Phoenix Crystal Corporation.

17. On October 24, 2003, Phoenix Crystal Corporation assigned the '266 Application to GE Superabrasives, Inc. (effective October 1, 2003).

18. On December 31, 2003, GE Superabrasives, Inc. signed an agreement assigning its rights in the '266 Application to Diamond Innovations, Inc.

19. On November 2, 2004, the '266 Application issued as the '610 Patent, owned at the time by Diamond Innovations, Inc.

20. On September 4, 2008, Diamond Innovations, Inc. signed an agreement (effective June 30, 2008) transferring its interest in the '610 Patent to Carnegie Institution of Washington, subject to a non-exclusive license.

21. On January 30, 2009, Carnegie Institution of Washington filed U.S. Patent Application No. 12/362,529 ("the '529 Application"), seeking reissue of the '610 Patent. This application later reissued as the '189 Patent.

22. Even though the Patent Office had denied their claim to inventorship years earlier, Carnegie alleged that Frushour was incorrectly named as an inventor of the '610 Patent and that Russell J. Hemley, Ho-kwang Mao, and Chih-shiue Yan were incorrectly not named as inventors. This allegation was not accompanied by any signed declaration of Frushour.

23. On information and belief, Carnegie deliberately omitted material information about Carnegie's denied interference request, including the declaration submitted by the substitute inventors named on the '529 Application. But for those omissions, the Patent Office would have refused to grant the '529 Application. Because the reissue statute permits only correction of errors made without deceptive intent, Carnegie's deliberate failure to disclose these prior allegations of deceptive intent misled the Patent Office into reissuing the '189 Patent.

24. These specific examples of inequitable conduct described above are intended to be exemplary only, as further facts developed through discovery may provide additional examples.

**SIXTH AFFIRMATIVE DEFENSE
(Invalidity Under § 251)**

25. On January 30, 2009, Carnegie filed the '529 Application under 35 U.S.C. § 251, seeking to change the inventorship of the '610 Patent by removing Frushour as an inventor and adding the '171 Applicants: Hemley, Mao, and Yan. To correct inventorship under 35 U.S.C. § 256 requires that "all parties"—including all inventors being added, removed, or maintained—agree and that inventorship is not contested.

26. Having failed to trigger an interference proceeding more than four years prior, and opting not to change inventorship through a certificate of correction (which would have required Frushour and Li's consent), Carnegie unilaterally applied for a reissue without submitting any information by or on behalf of the inventors listed on the '610 Patent or the substitute inventors identified in the '529 Application.

27. The same law firm that filed the '529 Application also filed the '171 Application and recorded the assignment from Diamond Innovations, Inc. to Carnegie Institution of Washington.

28. On April 6, 2010, the Patent Office reissued the '610 Patent as the '189 Patent with the inventorship changed as requested.

29. Under 35 U.S.C. § 251, reissue of the '189 Patent was only proper if it corrected an error made without any deceptive intention.

30. The declaration accompanying the '171 Application indicated that Li concealed the existence of the '266 Application from the '171 Applicants and suggested that Frushour did not contribute to the invention.

31. Deliberate actions taken during prosecution, such as those taken by the applicants and their attorneys during prosecution of the '266 and '171 Applications, are not errors made without any deceptive intention under § 251.

32. On information and belief, Frushour and Li purposefully did not name the '171 Applicants as co-inventors of the '266 Application and purposefully named themselves as the sole inventors of the '266 Application. The '189 Patent therefore reissued contrary to § 251 and is invalid.

**SEVENTH AFFIRMATIVE DEFENSE
(Lack of Standing)**

33. After the change in inventorship effected by the issuance of the '189 Patent, Hemley, Mao, and Yan were each made a joint owner of the '189 Patent. Because no documents are recorded with the USPTO reflecting that Hemley, Mao, or Yan assigned their rights in the '189 Patent to Carnegie, on information and belief, Plaintiffs lack standing to sue for infringement of the '189 Patent.

34. Additionally, the '171 Application was published on February 3, 2005, as U.S. Patent Application Publication No. 2005/0025886. Paragraph [0002] of that document states that “This invention was made with U.S. government support under grant number EAR-0135626

from the National Science Foundation. The U.S. government has certain rights in the invention.” The ’189 Patent lacks any such statement. On information and belief, Carnegie failed to notify the federal government that it has rights in the ’189 Patent within the time allotted under 35 U.S.C. § 202(c)(2), giving the federal government no notice or opportunity to exercise its rights in the ’189 Patent.

35. On information and belief, M7D Corporation has not established that it has standing to enforce either of the asserted patents. M7D Corporation has not alleged that it is an exclusive licensee or owner of either asserted patent, and it is well settled that a non-exclusive licensee of a patent has no standing to sue for infringement.

36. On information and belief, Plaintiff M7D Corporation is, at best, a non-exclusive licensee of at least the ’189 Patent. For example, Diamond Innovations, Inc. retained a non-exclusive license to the ’610 Patent when it assigned title to the ’610 Patent to Carnegie Institution of Washington. On information and belief, nothing in the license between Diamond Innovations, Inc. and Carnegie Institution of Washington would preclude that license from surviving a reissue to amend inventorship.

37. These specific examples are intended to be exemplary only, as further facts developed through discovery may provide additional examples of Plaintiffs’ lack of standing.

EIGHTH AFFIRMATIVE DEFENSE (License, Release, Patent Exhaustion)

38. Plaintiffs’ attempted enforcement of the asserted patents is barred, in whole or in part, by one or more of the doctrines of license, release, and patent exhaustion.

NINTH AFFIRMATIVE DEFENSE (Enforceability—Laches, Estoppel, Acquiescence, and Waiver)

39. Plaintiffs are barred in whole or in part by the doctrines of laches, estoppel,

acquiescence, and/or waiver from enforcing the asserted patent against both PGD and 2AT.

OTHER DEFENSES

40. PGD's and 2AT's investigations of their defenses are continuing, and PGD and 2AT both expressly reserve their rights to allege and assert any additional affirmative defenses under Rule 8 of the Federal Rules of Civil Procedure, the patent laws of the United States, and any other defense, at law or in equity, that may now exist or in the future be available based upon discovery and further investigation in this case. To the extent applicable, PGD and 2AT both also expressly incorporate by reference herein all defenses pled by the other defendants in other actions against Plaintiffs involving the asserted patents.

COUNTERCLAIMS

Defendant PGD asserts the following counterclaims against Plaintiffs Carnegie and M7D.

THE PARTIES

1. PGD is a Delaware corporation with a headquarters located at 45 West 45th Street, 5th Floor, New York City, New York 10036.
2. Upon information and belief, Carnegie is a Washington, D.C. corporation with its headquarters and principal place of business at 1530 P St. N.W., Washington, D.C. 20005.
3. Upon information and belief, M7D is a Delaware corporation with its headquarters and principal places of business at 6700 Virginia Manor Road, Beltsville, Maryland 20705.

JURISDICTION AND VENUE

4. PGD's counterclaims for declaratory judgment arise under the Federal Declaratory Judgment Act and the patent laws of the United States, 28 U.S.C. §§ 2201 and 2202, and 35 U.S.C. § 100 *et seq.* This Court has subject matter jurisdiction over PGD's counterclaims

under 28 U.S.C. §§ 1331, 1367, and 1338(a).

5. On January 9, 2020, Plaintiffs filed their original Complaint (ECF No. 1) in the Southern District of New York. The Complaint alleged infringement of the '078 and '189 Patents. PGD denies infringement of the patents-in-suit and asserts invalidity and unenforceability of the patents, among other defenses, as set forth above. As a consequence, there is an actual justiciable controversy between PGD and Plaintiffs regarding the validity, enforceability, and infringement of the claims of the Patents-in-Suit.

6. This Court has personal jurisdiction over Plaintiffs at least by virtue of their consent to file this case in the Southern District of New York.

7. To the extent venue in this Court is proper for the claims set forth in Plaintiffs' Complaint, venue is also proper for these counterclaims.

**FIRST COUNTERCLAIM
(Declaratory Judgment of Invalidity)**

8. The allegations of Paragraphs 1-8 of the Counterclaims are incorporated by reference as if fully set forth herein.

9. The claims of the patents-in-suit are invalid for failing to comply with the provisions of the Patent Laws, Title 35 U.S.C., including without limitation 35 U.S.C. §§ 101, 102, 103, 112, and 251. PGD repeats the allegations set forth in the Second and Sixth Affirmative Defenses as if fully set forth herein.

10. Accordingly, PGD is entitled to a declaratory judgment that the claims of the patents-in-suit are invalid.

**SECOND COUNTERCLAIM
(Declaratory Judgment of Non-Infringement)**

11. The allegations of Paragraphs 1-11 of the Counterclaims are incorporated by

reference as if fully set forth herein.

12. PGD has not infringed and is not infringing, either directly or indirectly, any claim of the patents-in-suit, either literally or under the doctrine of equivalents. PGD repeats the allegations set forth in the First Affirmative Defense as if fully set forth herein.

13. Accordingly, PGD is entitled to a declaratory judgment that it has not infringed and is not infringing any claim of the patents-in-suit.

THIRD COUNTERCLAIM (Inequitable Conduct)

14. The allegations of Paragraphs 1-14 of the Counterclaims are incorporated by reference as if fully set forth herein.

15. The '189 Patent is unenforceable because the it is a reissue of a patent that was procured by inequitable conduct or, in the alternative, because the '189 Patent was itself acquired through inequitable conduct. PGD repeats the allegations set forth in the Fifth Affirmative Defense as if fully set forth herein.

EXCEPTIONAL CASE

16. This case is an exceptional case under 35 U.S.C. § 285, and PGD is entitled to recover from Plaintiffs attorneys' fees and costs incurred in connection with this action.

PRAYER FOR RELIEF

WHEREFORE, PGD prays for judgment:

- a. Dismissing Plaintiffs' Complaint with prejudice;
- b. Finding in favor of PGD on Plaintiffs' infringement claims (i.e., that PGD has not infringed and is not now infringing any valid claim of the asserted patents);
- c. Finding that all asserted claims of the asserted patents are invalid and/or unenforceable;
- d. Finding that this case is exceptional under 35 U.S.C. § 285 and awarding PGD its

reasonable costs and expenses of litigation, including attorneys' fees and expert witness fees;

e. Awarding such other and further relief as this Court may deem just and proper.

Dated: May 8, 2020

s/ William P. Deni, Jr.

William P. Deni, Jr.

J. Brugh Lower

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